# Money Versus Medicine: Public Perceptions of Patenting Medical Innovations

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*"Money, money, money"*
(ABBA, 1976)

The effect of demographics on the public's perceptions of the pharmaceutical industry, and the subsequent influence this has on over-the-counter painkiller buying preference, is a sparsely researched area. At the time of publication, there had been no links made between demographic factors, such as gender and location, and the perceptions of the public when it comes to the pharmaceutical industry. While the gender, highest level of education, age, and location of respondents were considered in this study, only data collected relating to the participants' education and age were significant for analysis, due to limitations in the study's design. A relationship between the highest level of education achieved, and an understanding of the patent process was successfully mapped, demonstrating that a higher level of education equates to a better understanding of how patents are used in the pharmaceutical industry. Market prices were the most prominent reason for over-the-counter painkiller buying preference however, and contextual information provided to participants in the study only acted to reinforce previously held beliefs and opinions.

**Key Words: Public Perceptions, Pharmaceutical Industry, Over-The-Counter Painkillers**

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## Introduction

A survey carried out by YouGov in 2013 showed that less than one fifth of respondents in the UK (out of 4034 randomly approached UK adults) believed that the pharmaceutical industry is trustworthy, with one respondent admitting concern as to "*motives and actions*" of those involved in the industry (YouGov, 2013). While this is a relatively small sample corresponding to less than 1% of the total UK population (ONS, 2013) and is therefore not representative of the majority's opinions, it serves as an illustrative example of the public's views of the industry, especially as all respondents were random and not targeted.

Studies carried out into the sector (primarily in the US and Canadian markets, although other major markets including the UK are considered in the study's conclusions) have shown that while the quality of the service provided is vital in ensuring public usage, a sense of trust will be non-existent without a basic level of corporate integrity with the public (Perepelkin and Di Zhang, 2014). The pharmaceutical industry is perceived by many to be lacking in this respect as companies are often seen focusing on making money from the sick rather than curing them, through extortionate prices and marketing schemes supported through the patent system. While this is an assumption drawn upon from the Australian system, it is concluded that it is relevant for the majority of global pharma-

ceutical markets, including the UK's (Moynihan, Heath and Henry, 2002), making it a relevant addition to this study.

The patent system used by the pharmaceutical industry provides significant monetary incentive while protecting those innovations for a 20-year period. Upon expiration, the knowledge enters the public domain and smaller companies can sell their versions at a reduced price. Significant increases in global market pricing by 127% between 2008-2014 for blockbuster pharmaceuticals (Jensen, 2018), promoted by high research and development costs equating to $2.6 billion (Sullivan, 2019), is a direct result of increasing patent coverage. A recent study found that 70% of Americans considered these price hikes ample proof of pharmaceutical companies putting profit before patients (Loftstedt, 2007; Valverde, 2012).

The standard research and development process followed by pharmaceutical companies in the development of new drugs is shown in Figure 1. While the American healthcare system and patent system differ considerably from the ones used in the United Kingdom, it is still relevant to draw on comparisons between the two. The US has a privatised, insurance-based healthcare system requiring large cost from patients attributing to the negative views held by the 70% of surveyed Americans (Gallup, 2018). By comparison, the United Kingdom has a nationalised health service in which the cost to the patient is mostly free at the point-of-care.

Increasingly, media coverage of the pharmaceutical industry focuses on the profits of individual companies rather than any successes in developing new (Hinsliff, 2008) such that a staggering 69.5% of media headlines (globally) about the pharmaceutical industry in 2004 were negative (Sillup and Porth, 2007). This presents an interesting state of affairs in which overwhelmingly negative media coverage may could be used to influence the views towards the pharmaceutical industry. As of April 2019, there was no published peer-reviewed literature explicitly exploring the effect of certain demographics (education, age, gender and location) on the public perceptions of the pharmaceutical industry how these influence the buying preference for generic/own-brand or branded over-the-counter painkillers, and whether providing extra information will influence these opinions.

The use of generic pharmaceuticals over branded variants has been found to have no noticeable negative impact on the quality of treatment and yet there remains a market for branded products (Kwon, Lee and Kwon, 2008; Duerden and Hughes, 2010). The reasons for this are many with some research suggesting availability of funds and education both have an impact on purchasing choice (Valverde, 2008; Halme, Linden and Kaaria, 2009; Crigger et al., 2009). While this has been explored in the Indian Pharmaceutical Market, how these factors apply to the British market has not been evaluated (Sanyal and Datta, 2011). Exploring how perceptions and understanding differ across different societies, cultures and economic settings could be vital in understanding the role of the pharmaceutical industry today, and how these influence their functions and methods of sale.
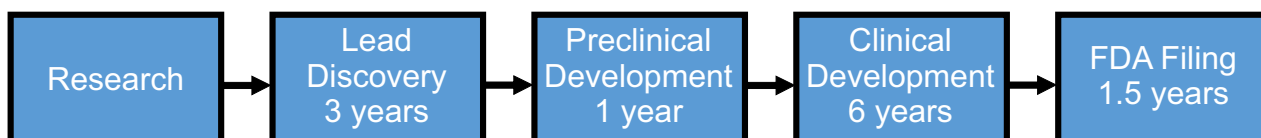


**Figure 1:** *Typical Drug Research and Development Timeline*

## Aims

The purpose of this research was to explore how the provision of information has the potential to alter and influence public opinion of the pharmaceutical industry. Additionally, this study aimed to determine the reasons why there is a tendency to purchase branded drugs rather than, the often cheaper, generic versions. Specific demographics, such as education, age, gender, and location and their ability to influence public opinion towards the pharmaceutical industry were considered as part of this study.

## Methodology

### Data Collection

A Google Form questionnaire was developed. This method of data collection was chosen because it allowed for a large quantity of data to be collected from a broad range of people across, irrespective of geographical location, in a short period of time. Data included in the questionnaire generated from media sources (quotes, television reports, and a case study on a life-saving pharmaceutical) was condensed and summarised to ensure ease of understanding by respondents. The questionnaire was distributed principally via the social media platforms, Facebook and Twitter. All respondents were assumed to be over the age of 18, and this was the only participation criteria. Multimedia clips were summarised into condensed forms to ensure ease in understanding and reduce the questionnaire's completion time.

### Ethical Considerations

Ethical approval for an online anonymous questionnaire was obtained from the Keele University CPS Student Ethics Committee. Question 15 (Case Study: Part A and B) of the questionnaire referred to a drug used to treat Hepatitis C. Given the stigmatism associated with Hepatitis C, the decision was taken to not directly reference Hepatitis C in Q15 (Marinho and Barrieram, 2013) thereby preventing any impact on responses.

### Data Analysis

In total, 64 responses were recorded. All of which were a mix of qualitative and quantitative data and were coded appropriately. Where respondents failed to answer the questionnaire in a serious manner (one respondent matched this criteria), that data was excluded from the final data analysis. Graphs were not used in this study due to the length and detail of responses, as well as the quantity of qualitative responses, although they were used to present the demographic information.

### Qualitative and Quantitative Data

For the open survey questions, responses were grouped under common themes, using the method described by Thomas (2006). In brief, all responses were read, condensed to highlight their key themes, and links between these and the research questions were established. Responses of similar themes were then grouped under one, broader, umbrella theme. For the multiple choice 'Y/N' questions, the results were grouped, tabulated, and analysed as previously outlined under Qualitative Data.

Analysis of the complete data revealed a higher proportion of female respondents than male respondents (Figure 2). This disparity meant that gender-based analysis was not possible. Additionally, analysis of the data demonstrated the majority of respondents originated from the UK (n = 43, 83%), with the remaining participants (n = 18, 17%) originating mostly from the USA (Figure 3). Given the inequitable distribution of participants' geographical locales, location-based analysis was also not undertaken. Had a more equitable distribution, in terms of participant gender and location, been achieved within the data, additional analysis focussing on these attributes may have been possible.

## Results and Discussion

The results from the responses (n = 64) to the questionnaire were analysed, as
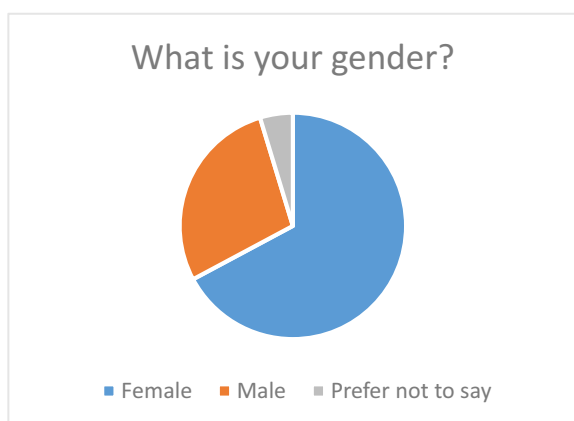
outlined under the Materials and Methods.
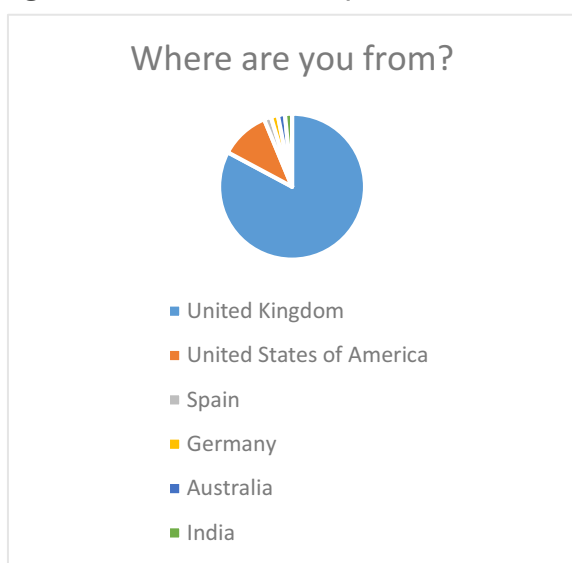


**Figure 2:** *Gender of Respondents*



**Figure 3:** *Geographical Location of Respondents*

**What is a "Pharmaceutical Patent"?**

As part of Q7, respondents were asked to provide their own definition of a pharmaceutical patent. The majority of responses contained considerable detail although some respondents replied "I don't know" or similar. Overall, 17% of qualifying respondents did not know what a patent was (in the context of the pharmaceutical industry), see Table 1. The results were distilled into essentially whether the respondents appeared to know what a pharmaceutical patent was, or not. Where responses were grouped as '*don't know*', the respondent either explicitly stated that they did not know what a patent was, or they gave an

entirely wrong definition. As a result, no answer was considered 'wrong', unless it deviated substantially in theme. Those that were grouped as "*did not understand the question*" either gave reference to medical *patients*, not patents, or provided an answer such as "*a patent on medications?*" (Female, 18-24, level 8).

After reviewing all answers, it was concluded that the question could have been more carefully worded for better sense. For the purpose of *Table Two*, "*don't know*" and "*did not understand the question*" were combined for simplicity. The general trend of the data captured by Q7 was that a higher level of education (Figure 4) led to a better understanding of patents. Graduates (Level 6) and post-graduates (Level 7) generally had a better understanding. Curiously, more of the Level 8 respondents did not know what a patent was, although this may be due to sample size. Overall, the trend was that a lower level of education resulted in a lower understanding of what a patent is: 81.8% of the people who did not know what a patent was were aged 18-24 and studying at undergraduate level, with the remaining two respondents having either Level 1 or Level 7 qualifications (Figure 5).
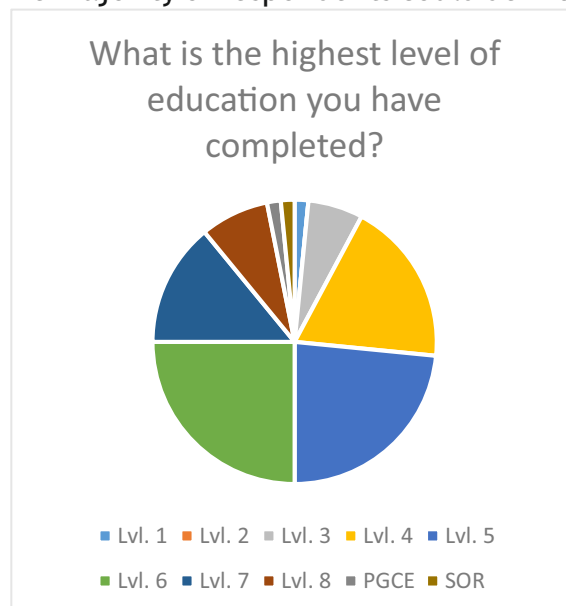
The majority of respondents could define a



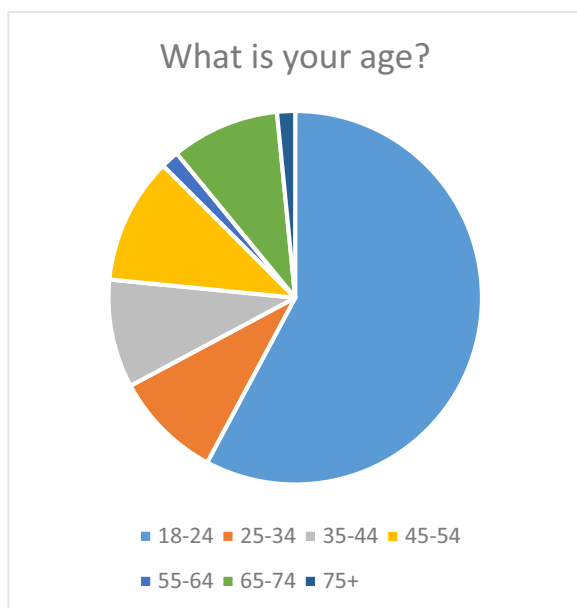**Figure 4:** *Highest Educational Qualification of Respondents*

**Figure 5:** *Age of Respondents*

"*patent*" with varying levels of detail, describing the purpose and function of a patent in the process, with points such as "*time-limited*" and "*commercial owner-ship*". However, the understanding the differences between a patent, trademark, and copyright was less clear with many respondents using the terms interchangeably in their responses. Each prevent varying degrees of copying and property infringement. The distinction between these terms is purely academic however, with the key aspect of all three terms being that they all relate to different stages in a pharmaceutical's lifespan (Termini and Miele, 2013). Once the answer to this question had been submitted, respondents were provided with a simple definition of what a pharmaceutical patent was. This was:

> *"A pharmaceutical patent is a legal document, lasting 20 years, that protects an invention for 20 years. This allows pharmaceutical companies to develop, test, market and sell new*

*pharmaceuticals without competition. Once the 20 years has passed, the knowledge enters the public domain, and smaller companies can sell their own versions."*

While the aim of this question was to establish whether the public understood what a patent is and, importantly, what a patent does, it also provided a useful insight into how the public perceives the industry, specifically how the industry may use patents for substantial financial gain as well as protecting their intellectual property.

The key point theme emerging from responses to this question was that the pharmaceutical industry uses the patent system to procure a considerable profit, rather than the commonly held belief that it is a force for promoting innovation and scientific development in the drug industry (Eisenberg, 2003). While the original goal of patent system utilised in the US by the FDA was to limit and prevent access to fraudulent products through market exclusivity, the system has since evolved; the patent system plays a pivotal role in ensuring that innovation is driven, leading to a substantial increase in R&D funding in recent years (Eisenberg, 2007).

**How much does developing a new drug cost?**

This question aimed to gauge the extent to which respondents understood the cost of developing a new drug which, according to Sullivan (2019), is estimated to cost $2.6 billion. Responses to this question varied considerably, with values ranging from thousands of pounds to billions, as outlined in Table 3. Respondents were given a free text answer box, with no prompts for how much typical drug development costs allowing for a 'true' opinion from respondents to be achieved. When constructing the questionnaire, it was anticipated that responses would be purely quantitative,

| Answer | # of Respondents |
|---|---|
| Protect a company's intellectual property | 2 (3.1%) |
| Time-limited monopoly | 1 (1.6%) |
| Protection of a pharamceutical | 5 (7.8%) |
| Don't know | 11 (17.2%) |
| Prevents copying | 7 (10.9%) |
| Shows ownership of a pharmaceutical | 5 (7.8%) |
| Time-limited exclusivity | 3 (4.7%) |
| Commercial ownership (time -limited) | 7 (10.9%) |
| Did not understand the question | 13 (20.3%) |
| Time-limited ownership | 1 (1.6%) |
| Commercial ownership | 3 (4.7%) |
| Trademark | 2 (3.1%) |
| Copyright | 3 (4.7%) |
| Guarantees exclusivity | 1 (1.6%) |

*Table 1: Tabulated Responses to Q7.*

| | What is a " *Pharmaceutical Patent* "? | |
|---|---|---|
| Education | Understood | Did Not Understand |
| Level 1 | 0 | 1 |
| Level 2 | 0 | 0 |
| Level 3 | 3 | 1 |
| Level 4 | 7 | 5 |
| Level 5 | 7 | 9 |
| Level 6 | 12 | 3 |
| Level 7 | 9 | 2 |
| Level 8 | 2 | 3 |

*Table 2: Education Level of Respondent and Understanding of Patents.*

| Answer | # of Respondents |
|---|---|
| Don't know | 1 |
| Depends | 1 |
| A lot | 4 |
| Thousands | 13 |
| Millions | 34 |
| Billions | 9 |
| Millions to Billions | 2 |

*Table 3: Responses to Q8.*

with rough cost estimates stated. However, when responses were analysed, it was found that 92% of respondents gave reasoning behind their answers, resulting in a mix of quantitative and qualitative data.

While none of the responses correctly identified the estimated price (14% correctly identified the price was in the billions), a common theme from the free-text answers was that you cannot put a price on a human life. That aside, many respondents correctly identified that developing a novel drug is time-consuming and costly, with multiple stages. Indeed, the majority stated (>70%) that while research and development costs will vary for different drugs; the average cost is high. All levels of education had a good grasp of this, and many knew the specifics in the development process as justification for their answer. This further appears to suggest that not knowing a precise legal definition of 'patent' does not mean there is a lack of understanding of the key ideas (Pauls, 2017).

*"Include the cost of hiring engineers, doctors, & test subjects. As well as paying for facilities to test new drugs"*

*Female, aged 18-24, level 5*

As media coverage is prominent, with some reports being branded as inaccurate and over-exaggerative (Dolak and Blaine, 2008), the common media representation of patents may be the source of people's knowledge in this aspect.

**What do you think is the main goal of a multi-national pharmaceutical company?**
A common theme in response to this question was that the pharmaceutical industry is only out to make a profit. There was no mention of curing illnesses, or increasing the accessibility of life-saving pharmaceuticals, only that the goal is to become an *"industry leader"*, maximising profit, and this was mirrored across the majority of responses. The use of patient also suggests vulnerability of the user, truly mirroring the words Latin origins (Neuberger, 1999).

*"The creation of drugs for the profit of the people"*

*Female, aged 18-24, level 5*

That being said, there was also a number of positive responses, highlighting that the pharmaceutical industry may not have these ulterior motives, and are primarily health-focused, not just working for a profit. The above response suggested that there can be a focus on profit, while still providing an adequate health service. It was identified that while there is the obvious goal of making a profit, the pharmaceutical industry is ultimately providing a service that treats illness and improve accessibility, even if it isnt seen as working for everyone.

Nearly all of the positive responses were from undergraduates aged 18-24 suggesting that younger generations have a more positive view of the industry, perhaps due to less negative, or even fewer, experiences because of their age. Interestingly, there were no responses talking about how while patients should be the priority, profit is vital in the development of pharmaceuticals; the industry is funded by private donors and shareholders who are unlikely to provide funding in the future if they do not see a return on their investments, stagnating the drug market (Taylor, 2015).

**Pharmaceutical companies have a responsibility to human life.**

The tenure of Henry Gadsden, the then CEO of Merck and Co. from 1965-1975 marked the dawn of the publicly perceived modern profit driven pharmaceutical industry. Under his guidance, Merck's client base increased, allowing for a quadrupled profit growth with earnings exceeding $225 million (Hbs.edu., 2019). This can be perceived as setting a dangerous precedent for the modern pharmaceutical industry in which everyone is a patient and patient's equal profit. Merck further increased research and development spending up to $1 billion after Gadsden's retirement.

*"Sell pills to everyone and make prescription drugs as normal and matter of fact as having a stick of chewing gum"*

*(Gadsden, 1971)*

| The pharmaceutical industry has a responsibility to human life | Original response | After reading that quote, do you now think pharmaceutical companies have a responsibility to human life? | |
| --- | --- | --- | --- |
| | | Yes | No |
| Strongly Agree | 22 | 19 | 3 |
| Agree | 31 | 28 | 3 |
| I don't know | 2 | 2 | 0 |
| Disagree | 7 | 0 | 7 |
| Strongly Disagree | 2 | 2 | 0 |

*Table 4*: Q10 Opinion Change Pre/Post-Quote.

Here, respondents were asked whether they believed pharamceutical companies had a responsibility to human life. They were then shown a quote from Henry Gadsden outlining his vision for the future of the pharmaceutical industry, and were then asked the same question again, with all results shown in Table 4.

Progression through the questionnaire saw the majority of people (73%) retain their original opinions, with the additional information either enforcing their opinion, or having no effect. In this case, few people (12.5%) changed their view on whether the pharmaceutical industry had a responsibility to human life. While the majority did remain with their original view, there were some notable changes, all of which seemed to revolve around profit.

> *"They still have a responsibility. They may not meet it or take it as seriously as they should, and they may make shortcuts in clinical trials, but that doesn't remove their responsibility"*
>
> *Female, aged 35-44, level 6*

Notably, it was suggested that while money is a major driving force, it is not the entire story. The above quote suggested that Gadsden only wanted to improve accessibility to pharmaceuticals for everyone who needs them, so those who require life-saving pharmaceuticals can access them as easily as someone would pick up a packet of gum; WHO predicts improving assess to essential medicines could save 10 million lives every year (Cohen, Mrazek and Hawkins, 2007). While a profit may be made in the process, there is a legal requirement that they must improve the overall quality of life and making a larger profit does not limit a drug's effectiveness.

**Case Studies**

As part of this study, participants were asked to consider two case studies (A and B), both of which explored the manufacturing cost and market price for a Hepatitis C treatment that cures the condition fully. As outlined in the Materials and Methods, while the case studies were designed using hepatitis C, it was decided to avoid any direct mention of the condition given the continuing stigmatism around hepatitis.

## Case Study A

On average, the NHS pays £35,000 for a 12-week course of a drug which completely cures a chronic condition, with few side effects, for a single patient. This cost covers just the purchase of the drug from the parent pharmaceutical company (Freeman and Hill, 2016; Newsnight, 2016).

> *"While it is impossible to reduce (the price of) human suffering to a mere cost- benefit analysis, it is likely that curing a chronic condition (with minimal side effects) saves the economy far more than the £35,000 price the NHS pays."*
>
> *Male, aged 18-24, level 4*

When asked if this price was justified, more than half (67%) of participants concluded that this cost represents value for money on the basis that it removes the need for future treatment while reducing any future impacts on healthcare services (Harris et al., 2014), ultimately saving money in the long run. What was not mentioned in the question however, was that this treatment is not universally provided by the NHS due to its cost, with treatment being considered on an individual basis, forcing the majority of patients to find other means of procurement (Newsnight, 2016). As a result of this,

people are turning to online buyer's clubs, where generic versions of these block-buster drugs are provided at a fraction of the healthcare market price; estimated Hepatitis C treatment through a buyer's club is estimated to cost an individual seeking treatment £750, compared to the NHS's cost of £35,000 (Newsnight, 2016).

## Case Study B

The same drug costs roughly £100 to be manufactured, for a 12-week course, for a single patient. After learning the cost of this particular drugs cost to manufacture, participants were then asked again if they believed the cost was justified, responses to this question are outlined in Table 5.

After this, two questions surveyed respondent's preferences for over-the-counter painkiller preference, with chemical similarities between standard branded and own-brand/generic options provided.

Participants were then asked whether they purchased over-the-counter or branded painkillers and, after learning of the differences and similarities in their activity, whether they would continue to purchase one or the other (*Table 6*) with 92% of respondents buying own-brand/generic painkillers, with the same reasons being given consistently, essentially: same drug, lower price. This supports the conclusions made by Halme *et al*. (2009), where price was the predominant factor in buying preference.

When provided with a chemical breakdown, 95% of people who said that they originally bought own-brand/generic painkillers said they would continue to do so, stating that the information provided confirmed their beliefs. There was a small number (3) of respondents, who previously said they bought own-brand/generic versions. Interestingly, of the

| Is this price justified? | | The high cost of this drug is justified, as it makes up for years of research and development costs | | | | |
|---|---|---|---|---|---|---|
| | Original | Strongly Agree | Agree | I don't know | Disagree | Strongly Disagree |
| Yes | 43 | 5 | 17 | 15 | 5 | 2 |
| No | 21 | 0 | 4 | 6 | 7 | 3 |

*Table 5: Opinion Change in Response to Case Study B.*

| | When buying over-the-counter painkillers, do you go for branded or own-brand/generic variants? | Do you think you will conti nue to buy the same branded or own-brand/generic painkillers in the future? | |
|---|---|---|---|
| | | Yes | No |
| Own-brand/generic | 59 | 56 | 3 |
| Branded | 5 | 4 | 1 |

*Table 6: Change in Buying Preference.*

original respondents who said they purchased branded over-the-counter painkillers (5), four admitted they would continue, stating they felt safer with the big brands, and that they know they work; an example of prior experiences dictating how choices are made (Halme, Linden and Kaaria, 2009). Only one person said they would no longer purchase branded after seeing the information stating that "*there is no difference*" (Male, aged 18-24, level 4).

A 'branded' pharmaceutical must undergo extensive development and clinical trials to show it is safe and is often developed to have a certain pharmacokinetic profile . In 1990, it cost approximately $1.3 billion to develop a blockbuster pharmaceutical compared to $603,000 for a generic drug (Reiffen and Ward, 2005) (Chawla *et al.*, 2014). Studies have shown that there is little chemical difference between over-the-counter painkillers of the same purpose (Jadge et al., 2014) and work the same (Studman, 2019), although not are all exactly physico-chemically equivalent to their branded equivalent (Okunlola, Adegoke and Odeku, 2009). Some brands are targeted at specific conditions, and while they may have similar ingredients resulting in little difference between the options available, people are more likely to buy a painkiller targeted at migraines than a generic paracetamol or ibuprofen (Pearl, 2015).

While it is important to understand the differences and similarities between over-the-counter painkillers and other life-saving pharmaceuticals, it is equally as important to understand that patent protection on a pharmaceutical prevents any company not listed on the patent document from selling their own version of the drug until the patent expires (Huskamp *et al.*, 2008); after this time, generic equivalents will most likely become available at a reduced market price.

Crigger *et al.* (2009) suggested that the education level of the consumer would directly impact buying choice; in this study, the sample size was not large enough to make a suitable comment on whether this was the case. Responses show a comparison between education and buying preference however, likewise, with age, there was no notable variation. This is not to say that they have no impact, just that this is not the case in this study. That being said, as the majority of respondents were university students, all of whom will have an interest in healthy lifestyles because of their ages, this is perhaps something that influences their purchasing choice, something which is mirrored in Halme *et al.* (2009) study.

Participants in this study were also asked, more generally, as to whether they believed the patent system worked (Table 7). This question was deliberately open-ended and vague in what it wanted as an answer; the aim was to establish whether participants understood the patent

| Strongly Agree | 0 |
| Agree | 16 |
| I don't know | 32 |
| Disagree | 11 |
| Strongly Disagree | 5 |

*Table 7*: *Views of the functionality of the patent system currently used in the pharmaceutical industry.*

system, and whether its function in protecting and supplying medication is fulfilled. Essentially, is the public educated enough on the patent system, enough to know when it works and when it fails?

Notably, half of respondents (50%) did not know whether the patent system works, stating they were not educated enough in the area to give an opinion. Age, education, and location had no impact on this opinion of the system; people have very little understanding in the area. Those that disagree, claim that the system isnt suitable nor sustainable, and does not work for its intended purpose, essentially holding vulnerable users to ransom; this is mirrored by the industry's critics, although no-one has provided a feasible alternative (Taylor, 2015).

## Conclusion

This study aimed to explore how the provision of information has the potential to alter and influence the public's opinion of the pharmaceutical industry. The public has an overall mixed perception of the pharmaceutical industry with the majority believing it is a money-centric industry. Education appeared to have an impact on understanding and views of the pharmaceutical industry, although there was no clear link between this and over-the-counter painkiller buying preference, with the majority buying generic versions in any case. Age also appeared to have little impact on generic/branded drug purchasing preference. Cost was found to be the biggest influencer, as previously found by Crigger *et al*. (2009), with many respondents understanding the similarities and differences between the available options. The information provided to participants around research and development costs did appear to have an impact, albeit primarily reinforcing previously held beliefs. Half of respondents did not know whether the patent system works, stating a lack of under-standing. This study could be taken further to understand the public's understanding, or lack thereof, of the patent system, and how it influences and impacts the running of the industry. A study into the extent of brand loyalty of the public may also yield interesting results. In conclusion, this study explored the extent to which different factors affect and impact the public's perceptions and opinions of the pharmaceutical industry, despite the limitations discussed below, a basis has been established for future research in the area to be conducted.

## Limitations

This paper aimed to understand the impact of demographics on the public's understanding of the pharmaceutical industry; this was partially successful, although the main downfall arose from the overall sample size. As this was a final year undergraduate research project, survey reach was limited to people the researcher had access to through social media, and the people who could access the shared social media posts. As a result of this, reaching people in other countries (which was one of the target demographics to be collected) was not as easy, meaning the UK had the largest pool in the results. A similar issue arose with both gender (more female respondents than male respondents) and age (primarily university students in level 4 to level 6 of their education). These issues could have been rectified by keeping the survey live for a longer period of time allowing for more people to answer and leading to a more varied sample pool. Other ways of sharing the survey than just social media and word of mouth would have been beneficial for getting a more varied data set.

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